

REMARKS

In the Office Action dated March 28, 2008, claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over Ossmann et al. in view of Jago et al. The Examiner acknowledged that the Ossmann et al. reference does not explicitly address conducting the ultrasound scan of the body region of the patient by coupling ultrasound radiation into the body region in one stationary scan plane. The Examiner relied on the Jago et al. reference as, according to the Examiner, disclosing an ultrasonic diagnostic imaging system that obtains images, in the presence of anatomical motion, in a stationary scan plane. The Examiner cited column 7, lines 30-39 in the Jago et al. reference in substantiation of this position.

The Examiner stated it would have been obvious to a person of ordinary skill in the art to use the aforementioned teaching of Jago et al. to modify the system disclosed in the Ossmann et al. reference for the purpose of tracking anatomy of interest in the presence of motion, while maintaining stabilization of the anatomy, the Examiner cited column 7, lines 15-16 of Jago et al. for this purpose.

This rejection is respectfully traversed for the following reasons.

Applicants acknowledge that the Jago et al. reference, like the Ossmann et al. reference, is concerned with the goal of image stabilization, namely the suppression of movement artifacts in images due to unintentional movements of the ultrasound head and/or of the patient being examined. This problem is described in the Jago et al. reference at column 1, lines 15-29 (moving patient) and at column 1, lines 30-46 (movement of an organ inside the patient). Throughout the entire disclosure of the Jago et al. reference, it is consistently stated that movement artifacts in images are eliminated by movement detection. Examples in the Jago et al. reference are at

column 1, lines 55-58 and column 3, lines 21-24, and Figures 2a and 2b and the associated description at column 3, line 36 through column 4, line 24.

The passage in Jago et al. at column 1, lines 47-49 specifically emphasizes the object of automating the aforementioned movement detection.

By contrast, for *image acquisition*, the Jago et al. reference explicitly states, at column 2, lines 17-21, that the ultrasound head is electronically or mechanically *panned* for volumetric imaging in order to acquire images from various body regions of the patient. The Jago et al. reference, therefore, acquires the actual images in the same manner as the Ossmann et al. reference. Neither of the Jago et al. or Ossmann et al. references discloses or suggests coupling ultrasound radiation into the body region in one stationary scan plane, in order to conduct an ultrasound scan of a region in that plane, as set forth in claim 1 of the present application. As stated in claim 1, and as argued in Applicants' previous response, the present invention proceeds on a completely different concept from the type of conventional scanning disclosed in the Ossmann et al. and Jago et al. references. In those references, either mechanical or electronic panning of the ultrasound head is undertaken in order to acquire sufficient 2D images to enable reconstruction of a 3D image of a region of interest. By contrast, in accordance with the present invention, the ultrasound head is maintained for scanning in a single scan plane, and the natural body motion of the subject, such as due to respiration, results in multiple 2D images being obtained that can then be assembled or reconstructed to form a 3D image.

With regard to the specific citations in Jago et al. relied upon by the Examiner, the cited passage at column 7, lines 30-39 refers only to embodiments or movement detection in the case of three-dimensional MPR image data, with suitable switching

between various MPR planes in order to eliminate the movement artifacts. The cited passage at column 7, lines 15-18 generally describes, in the case of 3D image data, the fact that movements of the patient or of the ultrasound head must be detected in order to eliminate movement artifacts in the resulting image.

Neither of these passages, therefore, refers to details of the actual image acquisition and more importantly, as noted above, neither of those passages, nor any other passage in the Jago et al. reference, discloses or suggests acquiring image data by coupling ultrasound radiation into a body region in one stationary scan plane.

Therefore, even if the Ossmann et al. system were modified in accordance with the teachings of Jago et al., the subject matter of claims 1-3 still would not result.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,

 (Reg. 28,982)

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